DOCUMENT RESUME

ED 161 527 PS 010 150

AUTHOR	Karnes, Merle B.; And Others
TITLE	Nurturing Intellectual Talent in Early Childhood.
INSTITUTION	Illinois Univ., Urbana. Inst. for Child Behavior and Development.
SPONS AGENCY	Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C.
PUB DATE	Sep 78
GRANT	OEG-00-75-00232
NOTE	25p.; For related documents, see PS 010 120, PS 010 146, and PS 010 151-57
AVAILABLE FROM	Publications Office, Institute for Child Behavior and Development, University of Illinois, 805 West Pennsylvania Avenue, Urbana, Illinois 61801 (Catalog No. 1403.004, $2.50)
EDRS PRICE	MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS	Concept Formation; Educational Diagnosis; *Gifted; *Handicapped Children; Instructional Materials; *Intellectual Development; Learning Activities; Preschool Education; *Talent Development; *Teaching Guides; Teaching Methods; Thought Processes
IDENTIFIERS	*RAPYHT Project

ABSTRACT

This teaching guide suggests practical ideas for encouraging intellectual talent in preschool children. It is part of a series of similar guides, developed by the RAPYHT Project (Retrieval and Acceleration of Promising Young Handicapped and Talented) for educating young gifted/talented handicapped children and gifted children with no handicaps. The guide begins with a brief review of research on the importance of encouraging the intellectually talented child to develop his or her cognitive abilities. Also presented is a list of common traits displayed by children with high intellectual abilities, and suggestions and general methods which can be integrated into a preschool program to stimulate intellectual talent. The final and largest section of the guide is devoted to specifying goal areas and appropriate classroom activities for intellectually talented children. The areas discussed include convergent thinking, divergent thinking, evaluative thinking, intellectual risk-taking, and the challenge of complexity, curiosity and imagination. An annotated list of resources is included. (CM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED161527

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Nurturing Intellectual Talent In Early Childhood

Merle B. Karnes, Paula Sabatino Strong, and Polly Kemp,

Available from:
Publications Office
Institute for Child Behavior and Development
University of Illinois
805 West Pennsylvania Avenue
Urbana, Illinois 61801
Price: $2.50 Catalog #1403.004
September 1978

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Merle B. Karnes

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

PS 010150

TABLE OF CONTENTS

	Page
Intellectual Talent in the Preschool Years	1
Common Characteristics of Children with Intellectual Talent	4
General Methods to Stimulate Intellectual Talent	6
Goal Areas and Activities	10
Annotated List of Resources	17

Developed by: RAPYHT Project
Project Director: Merle B. Karnes
Institute for Child Behavior and Development
University of Illinois
403 E. Healey
Champaign, Illinois 61820

RAPYHT: A Model Program for Retrieval and Acceleration of Promising Young Handicapped and Talented

Funded by: Bureau of Education for the Handicapped, Department of Health, Education and Welfare

"These materials were developed pursuant to a grant from the U.S. Office of Education, Department of Health, Education and Welfare, Bureau of Education for the Handicapped (Grant No. OEG 00-75-00232). However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred."

ACKNOWLEDGEMENTS

Many persons who interacted with our staff in our gifted project contributed in one way or another to this manual: Nurturing Intellectual Talent in Early Childhood. These persons were staff from other projects at Colonel Wolfe School, ancillary staff in the gifted project, parents, children, advisory board members, project consultants. To all of these individuals who were so supportive of our efforts, who gave freely of their time, and who shared ideas with us we extend our most sincere thanks.

Special appreciation is given to the teachers who tested the activities over the three years the project was developed and demonstrated--Tsivia Cohen, Linda Berg, Rebecca Durant, Beth Larey, Andra Johnson, Gary Petersen, Suzanne Anderson, Barbara Kilbourn, Georgeanne McBride.

A key person who gave overall supervision to the development of the manual, provided invaluable feedback and support to the writers was Jane Bertschi, Assistant Director of the project.

Thanks to our secretary, Bonnie White, who is responsible for the final typing of the manuscript.

Cynthia Mohrman is responsible for the art work and cover design which adds greatly to the appearance of the manual.

It is our hope that the suggestions in this manual will help teachers more effectively nurture talent among their charges and in addition, will motivate them to develop other activities for fostering talent.

Merle B. Karnes, Director, RAPYHT Project
Paula Sabatino Strong, Teacher
Polly Kemp, RAPYHT Disseminator

FOREWORD

In the Fall of 1975 the Institute for Child Behavior and Development at the University of Illinois received a grant from the Federal Bureau of Education for the Handicapped (BEH) to develop and demonstrate a model program for the "Retrieval and Acceleration of Promising Young Handicapped and Talented" (RAPYHT). Children from three to five years of age were included in the project, which has completed the last year of a three-year demonstration cycle and is entering into the first year of outreach funding.

The principle goal of this project has been to develop and demonstrate an approach for educating young gifted talented handicapped children who are enrolled in programs that also serve gifted children with no handicaps, average children with no handicaps and multi-handicapped children who are of higher but not gifted ability. Since there are relatively small numbers of gifted handicapped children in any population, the approach has been to educate them in the mainstream, but, at the same time, provide them with special programming to meet the unique needs associated with giftedness and talent.

A major outcome of this three-year demonstration project has been the completion of a set of printed materials designed to aid classroom teachers and parents who desire to identify and encourage the development of the gifts and talents of young children, including those who are handicapped. This set of materials includes guides for screening, assessing and programming for children in the areas of intellectual, academic (reading, math, science), creative, leadership, visual and performing arts (art and music), and psychomotor talent. These materials are applicable for use with young gifted/talented children as well as those who are gifted/talented with handicaps. In fact, every child has a measure of talent which may go underdeveloped unless identified and nurtured. Therefore, we are convinced that careful observation and programming in talent areas is important for all children.

We are also committed to the premise that the earlier we identify and program for talents the greater the chances that the child will fully develop his true potential. Nationwide, there have been relatively few efforts devoted to identifying and programming for young gifted/talented and even less for the gifted/talented handicapped. Hopefully, the products developed by the RAPYHT Project will create more awareness of the need to identify and program for this neglected segment of our population.

Merle B. Karnes, Ed.D.
Director of RAPYHT Project

INTELLECTUAL TALENT IN THE PRESCHOOL YEARS

Many people assume that intellectually gifted children have no special needs, that if left to themselves, they will excel on their own. But evidence proves contrary. Researchers and writers report that intellectually gifted children are often misunderstood by adults, unpopular with peers and stifled in expressing their talents (Lyon, 1976; Phillips, 1976; Tomasson, 1974). As of 1973, 40% of the intellectually talented children in the U.S. did not go on to college (Rowlands, 1974) and in 1970 and 1971 the Office of Education reported to the U.S. Congress that most intellectually gifted children perform far below their capability (Tomasson, 1974; Lyon, 1976). Intellectually talented children should be regarded as special and perhaps even handicapped, since they spend their school days in a situation that was designed for the average student. Activities which stimulate others often bore them, and so many of them learn to hate school and fail to perform well, or they learn to accept less than the best from themselves.

Many researchers and education experts write that increased motivation is a major objective for intellectually talented children (Ramos, 1975; Lyon, 1976; Witty, 1971; and Towlands, 1974). Torrance (1961), Dement (1957) and Phillips (1976) write that intellectually talented children may learn to regard their talent as a handicap in the desire to be like other children. Williams (1970) reports that motivations of these children to want to do something with information, facts and knowledge are crucial to intellectual performance. In his book, Classroom Ideas for Encouraging Thinking and Feeling, Frank williams includes ideas to increase children's motivations for learning. Several of the objectives in the activities section of this talent guide are taken from William's book.

Thinking is a learnable skill. J. P. Guilford has formulated a three dimensional model of human thinking called The Structure of the Intellect. The three dimensions of this model are:

1. Operations -- the types of thought processes that are used to compute information: cognitive, memory, convergent productive thinking, divergent productive thinking and evaluation.
2. Contents -- the kinds of information that are computed: figural, semantic, symbolic and behavioral.
3. Products -- the outcomes that result from computing information: units, classes, relations systems, transformations and implications.

For practical purposes, it is easiest to focus on the operations dimension of the SOI model. This dimension consists of:

- cognition -- recognizing information.
- memory -- remembering information.
- convergent productive thinking -- putting together information to produce a single answer.
- divergent productive thinking -- producing many and/or unusual answers.
- evaluation -- making judgments and decisions based on criteria.

Most school activities encourage the development of the cognition and memory operations by encouraging children to label objects and memorize facts and figures. The activities section of this talent guide includes suggestions for increasing divergent productive thinking, convergent productive thinking and evaluative thinking. By encouraging the intellectually talented child to develop these thinking abilities, you can help him learn how to use knowledge rather than just memorize facts.

Since preschool is a child's first encounter with school, it is important that the preschool teacher identify the intellectually talented child, attempt

to meet his special needs, and help him develop his talent. It is also important to work with the parents and help them become spokesmen for their child in order to avoid the misunderstandings and problems which may arise in future school experiences.

COMMON CHARACTERISTICS OF CHILDREN WITH INTELLECTUAL TALENT

The following are traits that a child with high intellectual abilities often displays.

1. The child learns easily and readily. She/he requires less drill to learn things than other children and often seems to learn things without being taught. The child will probably learn to read at an early age (three, four or five-years-old). Some children teach themselves how to read and surprise their parents by reading signs, billboards, labels, etc. Others show signs of reading readiness at an early age, but must be taught reading skills by someone else.
2. The child displays an excellent memory. Parents often notice this characteristic and mention it.
3. The child works well independently. She/he will withdraw from surrounding company in order to become absorbed in an activity of interest.
4. The child displays the ability of abstraction and generalization early. For example, the child may be able to add two or three to a number mentally. The child might show an understanding of science concepts (evaporation, gravity, etc.), or the child may quickly understand morals to fables and stories.
5. The child displays intellectual curiosity. She/he is eager to learn and is probably advanced in one or more academic areas (reading, math, science). The child is skilled at asking questions and goes beyond "What" questions to "Why" and "How." She/he listens to the answers attentively and often instigates further discussion or investigation.
6. The child displays a wide range of interests. His/her curiosity is easily aroused. The child becomes equally absorbed in many different

tasks.

7. The child has a large vocabulary and is advanced in language skills and oral expression. At the preschool level, the child seems to enjoy talking and might monopolize conversations. She/he may use many polysyllabic words (not necessarily accurately).
8. The child is a skilled problem solver. She/he might enjoy thinking of solutions to situational problems, such as: How can forgetful Harry remember to put his shoes on in the morning? Even at a very young age the child might enjoy finding answers to science or math problems.
9. The child is creative and imaginative. Creativity and intelligence do not necessarily go hand-in-hand, but high intelligence is definitely an asset towards creative ability and expression. With some encouragement, most intelligent children can learn to be extremely creative.
10. The child is alert and observant. She/he is very alert to events around him/her and notices details that others miss. She/he is aware of things that others his/her age are not. The child may show interest in news events, or may be a keen observer of others' feelings and moods.

GENERAL METHODS TO STIMULATE INTELLECTUAL TALENT

The intellectually talented child might be a challenge to you as a teacher. Because of this talent she/he may seem different to you and the other children. She/he might have special problems and will definitely have different interests and special needs. The following are some suggestions which can be integrated into a preschool program for meeting the needs of an intellectually talented child.

1. Provide academic activities which are appropriate to the child's social/emotional and motor abilities. Most intellectually gifted children are advanced in one or more academic areas. But few preschoolers are able to perform or attend to activities designed for the maturity level of a six or seven-year-old child. For example, few preschoolers have the fine motor ability or attending level necessary to work paper and pencil math problems. Math games are more appropriate. Although a preschooler may be able to read, she/he may not enjoy books written for older children. Consider what motivates the individual child and provide materials and activities that she/he particularly enjoys. It may help to provide real-life experiences which call for the active participation of the child, and then to stress skills necessary for that participation. For example, you might use a cooking activity to introduce measurement or fractions. For ideas in specific academic areas, refer to the reading, math and science sections of this series.

2. Encourage the child to be an independent learner. This does not mean giving the child free license. Allow at least part of each day for

the child to plan his/her own activities. Give direction to these self-planned activities by asking stimulating questions and suggesting resources for information (books, filmstrips, experts, field trips). For example, if the child is working with a magnet, you might ask, "How many things can the magnet pick up at once? Can the magnet pick up very heavy things? Very tiny things? What kinds of things does a magnet attract? How could you find out? (The child may suggest either a book or an experiment set up to answer this question.)

3. Emphasize concept-learning whenever possible. The child will enjoy the learning process more if he can understand systems, see relationships and anticipate consequences of events. For example, in experimental situations, encourage the child to form his/her own hypotheses about what is happening and why. Help him/her use resources to verify guesses and expand on an idea by introducing activities, materials and new experiments. Some classroom materials which stimulate independent learners are:

   - water table with sinking and floating objects
   - magnets
   - old clocks and other gadgets to take apart
   - checkers and Parcheesi games
   - materials for growing plants from seeds
   - advanced lotto games
   - simple electricity set (adult assistance required)
   - freezer and oven for testing the effects of heat and cold on objects (adult assistance required)
   - typewriter
   - fulcrums and pulleys
   - simple, well-illustrated child's dictionary and encyclopedias
   - well-illustrated science and fact books
   - carpentry tools and heavy carboard and/or wood

4. Encourage self-evaluation. Intellectually gifted preschoolers sometimes display a great reliance on adult guidance and a desire for

adult judgment. Encourage the child to decide for himself/herself the rightness, wrongness, correctness, beauty of something. Allow the child to fail. Even if you know a hypothesis is wrong or an experiment won't work, treat each idea as valid and help the child accept failure positively and learn from it.

5. Take time to converse with the child. Intellectually gifted children usually have a great desire to talk with adults. Ask the child's opinion about things: classroom rules, field trip possibilities, how to make a certain toy more fun to play with, etc. Discuss philosophical questions such as death, evil, love.

6. Consider the child's social/emotional development. Many children have trouble coping with their own talents, expecially since they have a strong desire to be like their peers. Intellectually talented children often choose one of three patterns for adjusting to demands of those around them (Dement, 1957). They may 1) withdraw, 2) become very bossy and/or 3) pretend not to be as intelligent as they are. Encourage the child to intereact with other children in the classroom and cooperate with them in play and learning situations. If possible, provide intellectual peers for the child to interact with.

   Help the child become aware of his/her own talents. The child may be puzzled or frustrated that others cannot do what she/he can. Point out to the child where his/her special talents lie without stressing that he/she is "superior" to others. "You are very good at reading, answering riddles, making up stories, etc." Also point out the talents of others. "Ellen is also good at working difficult puzzles" or

"Dan is a very good runner." This will help the child appreciate his/her own talents and those of others, and it will help the child understand himself/herself in relation to others. Hopefully, this will lead to better relationships with other people.

7. Encourage creativity. Intellectually talented children have great potential for creative learning and expression. (See the creativity talent guide for specific suggestions.)

8. Work with the parents. Of course, every parent will react differently to an intellectually talented child. Some may fear the child, or resent him/her for being different. Others might have expectations of the child that are unrealistic. They might treat the child like a little adult. Help the parents establish realistic expectations and views of the child.

   Encourage them to provide space and materials at home for the child to pursue his/her interests. The space need not be large. It might be a small work table in the corner of a room. The best materials are those found around the home (old machinery or parts, safe tools--hammers, screw drivers, gardening equipment, cooking utensils, scraps of fabric, milk and yogurt containers, etc.) Encourage the parents to set aside some time to spend with the child, e.g., going on outings, building things or cooking together, reading to the child or making up stories together, physical activities, etc. The parents should also encourage the child to play with other children at home. Emphasize to the parents that they will be the spokesmen for the child throughout his/her school years.

GOAL AREAS AND ACTIVITIES

This section includes specific goal areas and classroom activities for intellectually talented children. The following goals A, B, and C are taken from Guilford's Structure of the Intellect model.

A. To increase convergent thinking -- putting together information to produce a single correct answer.

1. Give the child clues about a particular story and have him guess which story it is: "I'm thinking of a story about three animals who built houses for themselves, but another animal tried to knock their homes down." To make the activity more difficult, give clues about stories that are less familiar to the child.

2. Have the child complete verbal analogies:
   - All babies are little. Your brother is a baby, so your brother is . . .
   - All candy tastes sweet. Chocolate is candy, so chocolate tastes . . .
   - All plants need sunlight. A tree is a plant, so a tree needs . . .

3. Make a "treasure hunt" for the child. Hide five or more clues throughout the room leading to the "treasure," e.g., a small toy, art utensil, etc. Give the child a piece of paper with the first illustrated clue on it, symbolizing the location of the next clue. For example, give the child a picture of an oven, so that he may find the next clue

inside a toy oven in the room. The clue in the oven might be the picture of a flower pot, indicating that the next clue is under a flower pot, etc.

4. Put materials for an activity in a box and draw clues about the materials on the outside of the box. For example, put materials for making cookies in a box and draw a person baking and several of the materials on the box. Tell the child that when he guesses what is in the box, he may do the activity.

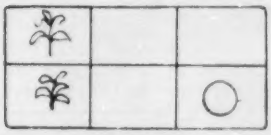
5. Introduce the child to the "answer puppet." This puppet can only give answers; he will never ask questions. Have the puppet make a statement and tell the child to think of a question for that statement. For example, if the puppet says, "on the playground," the child might ask, "Where do we play?, Where do we go after snack?, Where are the tricycles?," etc.

B. <u>To increase divergent thinking</u> -- producing many and/or unusual answers.

A divergent thinker does not look for the immediate correct answer to a question or problem, nor does he stop short at simple solutions. A divergent thinker uses his imagination to explore many possibilities and answers and is open to new ideas. Divergent thinking includes fluency, flexibility, originality and elaboration. For suggested activities in these areas, see the creative talent guide.

C. To increase evaluative thinking -- making judgments and decisions based on criteria.

1. Make or provide a variety of matrices:



cardboard

cardboard cards

Make this activity more difficult by providing more cards than are needed.

2. Include commercial games in the classroom materials. Chance games, such as Winnie-the-Pooh and Candyland can be used first to teach the child the general rules governing games, how to follow rules, take turns, work towards goal and cooperate with other players. Then introduce strategy games, such as checkers and Parcheesi. In these games the child must observe carefully, predict, think of alternatives and solve problems. You will probably have to supervise these games at first.

3. Make patterns for the child to complete using blocks, flannel board pieces or drawings. For example: △ ○ □ , △ ○ ___ . As the child becomes skilled, you may devise more and more difficult patterns.

4. Make or obtain high level lotto games, such as one in which solid line figures match broken line fingers: ⌜ ⌝ ⌞ ⌟ and □ .

5. Present the child with shapes, pictures of objects, simple words. Include three items with which she/he is familiar and one which is new.

Have the child label the "new" item, by eliminating the familiar ones. For example, if a child can label circle, triangle and square, show him/her a circle, a triangle, a square, and a diamond and say "Show me the diamond."

6. Have the child find hidden objects in a picture. These can vary in difficulty. Children enjoy finding hidden letters, numbers, animals, shapes, etc.

(The following objectives, D, E, F, and G are taken from William's book, Classroom Ideas for Encouraging Thinking and Feeling.)

D. To increase intellectual risk-taking -- to have the courage to expose oneself to failure or criticisms, take a guess, function under conditions devoid of structure and defend one's own ideas.

1. Ask the child "Why" questions about the nature and function of things: Why do birds fly south? Why is the grass green? Why do worms live underground? Why do bees like flowers? Allow the child to make up answers without criticizing his/her inaccuracy. If the child is interested, help him/her find a simple explanation in a book or other resource.

2. Ask the child opinion questions. Would you rather be a child or an adult right now? What would you like to do more than anything else? What is your favorite time of day, food, story, toy, etc.? Why? Do you like summer or winter better? Why? What is your favorite room in your house?

3. Before a field trip, tell the child where you are going and have him/her guess several things you will see on the trip. Write his/her ideas on a sheet of paper. Afterwards, discuss with the child all his/her correct guesses.

4. Have the child choose several things to plant that she/he thinks will grow and several which will not grow. Some possibilities are raisins, popcorn, bird seed, beans, buttons, Have the child observe daily and verify his/her guesses.

5. Show the child how to use a scale. Then have him/her find two objects to weigh. Before the child weighs the objects, have him/her predict which one will be heavier.

6. Have the child define words. Ask him/her what various words mean without judging the correctness of the definitions. If the child shows interest, help him/her verify the defnition in a dictionary.

E. <u>To be challenged by complexity</u> -- to seek many alternatives, see gaps between how things are and how they could be, bring order out of chaos, and delve into intricate problems.

1. Ask more realistic situational questions: What would you do if a tornado were heading toward your house? What would you do if you saw your friend steal something? What would you do if your father fell down some stairs and were hurt?

2. Discuss problems that occur in the classroom. What should I do when lots of children keep spilling their drinks at snack time? What should

I do when children fight over the tricycles? How can I make this classroom look better?

3. Have the child draw pictures of abstract concepts, such as friendship, justice, evil, love, death, etc.

F. To increase curiosity -- to be inquisitive and wonder, toy with an idea, follow a particular hunch just to see what will happen.

1. Have the child look at letters of the alphabet in a mirror. Discuss how some letters look the same and others are reversed.

2. Cut a hole in a large box. Tell the child to look for objects with holes in them (buttons, straws, rings, etc.) and put them in the box. When several objects are in the box have the child explain to a puppet what function the hole serves in each object. If the child is not sure, help him by having the puppet ask questions and suggest appropriate resources to find out.

3. Blindfold the child and have him try to identify various foods.

4. Take the back board off a classroom piano so that the strings are visible. Allow the child to play the piano and observe the relationship between the keys and the strings.

G. To increase imagination -- to visualize and build mental images, feel intuitively, and reach beyond sensual or real boundaries.

1. Show the child a picture of an ant. Ask him/her, "If you were an ant, what things would look small to you?" Then show the child a picture

of an elephant and ask, "If you were an elephant, what things would look big to you?"

2. When you tell the child a story, have him/her think of a name for the story.

3. Have the child describe a monster for you to draw. Do not show the child your drawing until she/he finishes describing the monster.

4. When you are outside in the rain or snow, ask the child how boots (trees, grass, etc.) feel in that particular weather condition.

5. Have the child look for things that could be used to make unusual sounds or rhythms. Ask the child ways she/he could use the new found instruments. For example, have a parade, accompany another child singing or dancing, accompanying the group during music, give an impromptu concert, etc.

6. Present an improbable situation and have the child describe a result. What if dogs were bigger than houses? What if animals could talk? What if a monster came to town?

ANNOTATED LIST OF RESOURCES

1. Bridges, S. Problems of the gifted child, IQ-150. New York: Crane, Russak & Co., Inc., 1973.

This book includes observable traits of an intellectually gifted child, special needs of the intellectually gifted and suggestions for working with parents.

2. De Bono, E. Children solve problems. Middlesex, England: The Penguin Press, 1972.

This book stresses thinking as a learnable skill which requires practice and regular expression. Included are some example situational problems and children's solutions in the form of drawings.

3. Dement, A. Good students want counseling too. Journal of Counseling Psychology, April, 1957, 124-128.

This article considers special problems encountered by gifted children. Dement stresses three patterns gifted children may follow: 1) withdrawal, 2) bossiness, 3) pretending not to be gifted.

4. Eberle, R. F. Scamper: games for imagination development. Buffalo, New York: The D.O.K. Publishers, Inc., 1971.

This book contains teacher-directed activities designed to help children express their imaginative creativity. The games are appropriate for children of age three through high school.

5. Gallagher, J. J. Teaching gifted students: a book of readings. Boston, Mass.: Allyn and Bacon, Inc., 1965.

This book of readings covers such topics as the definition of gifted, characteristics of gifted children, curriculum (mostly covering arithmetic and science geared for elementary and high school students), teaching methods, and special problems of gifted children (underachievement, early school admission, classroom adjustment).

6. Gowan, J. C., & Torrance, E. P. Educating the ablest. Itasca, Illinois: F. E. Peacock Publishers, Inc., 1971.

This book of readings on the gifted includes identification, special programs, curriculum ideas, guidance, effective teacher characteristics, parents, creativity and disadvantaged gifted children. The section for parents is especially useful for parents of preschoolers. The bibliography is very extensive.

7. Guilford, J. P. & Hoepfner, R. The analysis of intelligence. New York: McGraw-Hill Book Company, 1971.

This book explains the structure of intellect model in detail and includes background information, implications, and uses of the model. Chapter 5: "Abilities in Reasoning and Problem Solving" is especially helpful in explaining specific abilities associated with advanced thinking skills. The appendix includes sample test activities (at adult level) for each factor of the model. These sample activities help illustrate the model and give ideas for further activities.

8. Hildreth, G. H. Introduction to the gifted. St. Louis, Missouri: McGraw-Hill Book Company, 1966.

This book lists some characterizing traits of intellectually talented children. It also offers some approaches to teaching the intellectually gifted.

9. Kennedy, B. T. & Newman, A. An Exploratory study of the effects of games on the development of cognitive skills in young children. The Gifted Child Quarterly, 1976, 20(3), 350-356.

This article summarizes a study done on the use of commercial games to exercise thinking skills. The study also presents some possible program goals for the intellectually talented.

10. Lyon, H. Education of the gifted and talented. Exceptional Children, 1976, 43(3) 166-168.

This article summarizes the 1970 report by the U.S. Commissioner of Education stressing the need for better services for the gifted. The article also stresses the need to offer not only cognitive academic programs for the gifted, but also programs which stress understanding of self and communication with others.

11. Phillips, M. Confluent education: the hidden curriculum and the gifted child. Phi Delta Kappan, 1976, 58(3), 238-240.

This article stresses developing intellectually gifted who are able to feel with and respond to others and who are aware of and knowledgeable about their own feelings and actions. The goal of this approach is for the gifted to use their talents for the benefit of others.

12. Quillian, B. F. Jr. & Rogers, K. S. Nine model programs for young children. (Vol. I) St. Louis, Missouri: National Program on Early Childhood Education, CEMREL, Inc., 1972.

The problem solving section of this book includes illustrated ideas for preschool activities.

13. Roeper, A. Planning for the gifted: a new task for nursery school educators. Gifted Child Quarterly, 1963, 7(3), 113-115.

This article concerns special problems of intellectually gifted children: special behavior problems, need for adult attention, need to communicate. Roeper describes a program. for gifted preschoolers which includes advanced academics, problem solving activities, self-evaluation, verbal expression of feelings and ideas, and a concentrated language program.

14. Roeper, A. The young gifted child. Gifted Child Quarterly, 1977, 20(3), 388-396.

This article covers special problems of gifted preschoolers. It deals especially with problems created by the discrepancy between the emotional and intellectual maturity of gifted preschool children. Roeper offers practical suggestions for dealing with various problems.

15. Schaefer, C. E. Becoming somebody: creative activities for preschool children. Buffalo, New York: D.O.K. Publishers, Inc., 1973.

This idea book is designed to aid parents and teachers in encouraging the young child's powers of creative thinking and self-expression. Chapter 6 includes activities to encourage "thinking, imagining and problem-solving."

16. Tomasson, V. Gifted children in a bind. The Education Digest, 1974, 39(6), 32-35.

This article stresses the need for special programming for intellectually talented children and offers a list of observable characteristic traits.

17. Torrance, E. Curriculum frontiers for the elementary gifted pupil -- flying monkeys and silent lions. In J. Gallagher, Teaching gifted students: a book of readings. Boston, Mass.: Allyn and Bacon, 1965.

This article suggests several areas of concern in teaching gifted children, such as self-initiated learning and self-directed learning, academic readiness and self-acceptance. Torrance also suggests several techniques for effective teaching of talented children. Some of these are: rewarding a diversity of talents, helping children recognize their own talents, helping children accept their own limitations, changing the emphasis on sex roles, reducing the isolation of the gifted child.

18. Williams, F. E. Classroom ideas for encouraging thinking and feeling. Buffalo, New York: D.O.K. Publishers, Inc., 1970.

This book includes many motivating activities which can be used at the preschool level. Williams stresses the importance of both exercising a child's ability to think (cognitive) and maintaining a positive

attitude towards learning in the child (affective). Williams uses a three dimensional model in designing the activities. The model covers 1) six curriculum areas, 2) eighteen teacher behaviors or strategies and 3) eight pupil behaviors. The pupil behaviors are either cognitive or affective.

19. Witty, P. A. Reading for the gifted and the creative student. Newark, Delaware: International Reading Association, 1971.

This book includes suggestions for facilitating learning in the gifted child. Some topic areas are 1) being a facilitator of learning rather than a director, 2) providing a challenge rather than pressure, 3) being as concerned with the process of learning as the product, 4) providing feedback rather than judgment, 5) providing alternative learning strategies, and 6) providing a climate which promotes self-esteem and the opportunity for creativity and cognitive risk-taking.